



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/089,155

03/27/2002

Hiromichi Shimizu

529.41290X00

9797

20457

7590

03/22/2005

ANTONELLI, TERRY, STOUT & KRAUS, LLP
1300 NORTH SEVENTEENTH STREET
SUITE 1800
ARLINGTON, VA 22209-3873

EXAMINER

SHRIVASTAV, BRIJ B

ART UNIT

PAPER NUMBER

2859

DATE MAILED: 03/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/089,155

Applicant(s)

SHIMIZU, HIROMICHI

Examiner

Brij B. Shrivastav

Art Unit

2859

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-3, 5-12, 14 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Boernert et al (JP 9-168528).

As regards to claim 1, Boernert et al teach a magnetic resonance imaging diagnostic apparatus, including a magnetic field generating means for generating static magnetic field, gradient magnetic field and high frequency magnetic field; detection, image reconstruction and display means (figure 1, numerals 1-3,10-12 and 20). Further, Boernert et al teach control means for controlling each of said means, in which the magnetic field generating means generates gradient magnetic field in three directions which are being perpendicular to each other, and said control means applies swinging gradient magnetic field with predetermined amplitude at least two directions at the same time applying the high frequency magnetic field (figures 1-4, numerals 5-9 and 24; see English abstract).

As regards to claims 7 and 10 Boernert et al teach a magnetic resonance imaging diagnostic apparatus and imaging method, including a magnetic field generating means for generating static magnetic field, gradient magnetic field and high frequency magnetic field; detection, image reconstruction and display means (figure 1,

numerals 1-3,10-12 and 20). Further, Boernert et al teach control means for controlling said each means, in which the control means having means for setting desired region of interest in the predetermined region of the object, and means for calculating modulation wave form of high frequency magnetic field for selectively exciting the region of interest , and performs the control of applying the modulated high frequency magnetic field with the modulation wave form at the same time awing gradient magnetic field of two or three axes direction to acquire signals including spectrum information from determined region of the object (figures 1-4, 7-8, numerals 5-9, 23 and 24; see English abstract).

As regards to claims 2, 3, 5, 6, 8, 9, 11, 12, 14 and 15, Boernert et al further teach limitations of these claims as describe in figures 1-7.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 4 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boernert et al (JP 09168528A as applied to claims 1 and 10 above, and further in view of Watanabe et al (JP 05154131).

As regards to claims 4 and 13 Boernert et al do not teach control means applying RF magnetic field for selectively exciting water spectrum before applying swing gradient magnetic field and gradient magnetic field for dephasing water magnetization.

Watanabe et al teach control means applying RF magnetic field for selectively exciting

Art Unit: 2859

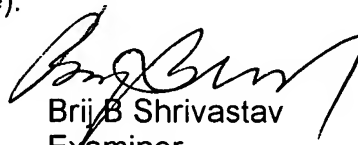
water spectrum before applying swing gradient magnetic field and gradient magnetic field for dephasing water magnetization (1-4, 10-13. It would have been obvious to one of ordinary skill in the art to adapt teaching of Watanabe et al with the teaching of Boernert et al to increase S/N ratio improving image quality

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brij B. Shrivastav whose telephone number is 571-272-2250. The examiner can normally be reached on 7 AM to 4 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego F. F. Gutierrez can be reached on 571-272-2245. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

March 16, 2005


Brij B Shrivastav
Examiner
Art Unit 2859
